



Correspondence

Surgical strategies for duodenal GISTs: Benefits and limitations of minimal resections



Dear Editor,

We read with great interest the manuscript by Duffaud and co-authors focused on the conservative management of duodenal GISTs¹ and we would like to further discuss this approach.

Duodenal GISTs are rare neoplasms, but the surgical strategy might be challenging in relation to the proximity to the surrounding structures as the biliary tree or the pancreas.

According to this, a pancreaticoduodenotomy might be required. It seems important to highlight, however, that as stated by the NCCN guidelines the goal of surgical treatment is a complete resection of the tumor with negative microscopic margins, avoiding whenever possible tumor's rupture.² Moreover a lymphadenectomy is usually not required, because nodal metastases are very rare in sporadic GISTs,² although are common in a setting of Carney Triad or in pediatric GISTs.³

From 1999 to-date 92 patients underwent surgical resection for GIST at our Department and among these, 8 patients underwent a surgical treatment for duodenal GIST (8.69% of our case series, previously described^{4–6}), [Table 1](#).

We reported a mild prevalence of males and a mean age at presentation of 57.3 years, in keeping with Duffaud's findings,¹ even though we reported a prevalence of D4 localizations and a smaller mean tumor's diameter.

Pre-operative work-out was consistent with a clinical diagnosis of stromal tumors in all cases ([Fig. 1](#)).

Notably none of the patients underwent a pancreaticoduodenotomy, but all tumors were considerate suitable for a minimal resection with preservation of the pancreas and the biliary structures.

All the resections, anastomosis and sutures were carefully reviewed intra-operatively and were considered

tension-free, thus a reconstruction using a jejunal Roux and Y anastomosis was not required.⁶

All the resections were proved to be R0 at the pathological examination, with free margins. All tumors were c-kit positive and five were concurrently CD34 positive (whereas CD34 was not tested in the remaining 3 patients). DOG1 was investigated in three patients resulting positive in all the cases. Even though the 50.0% of the patients were classified in the low-risk group, the 37.5% was considered as high-risk GISTs.

Post-operative course was un-eventful in six patients (75%): one patient had a post-operative chylous fistula

Table 1
Clinical and pathological features of duodenal GISTs treated with minimal surgical resection.

Sex – n (%)	
M	5 (62.5%)
F	3 (37.5%)
M/F	1.66
Age - years	
Mean; SD	57.3; 14.3
Range	28–76
Location – n (%)	
D1	2 (25.0%)
D2	1 (12.5%)
D3	2 (25.0%)
D4	3 (37.5%)
Symptoms – n (%)	
Gastrointestinal bleeding/anemia	4 (50.0%)
Abdominal pain	1 (12.5%)
Diarrhea	1 (12.5%)
Incidental diagnosis	2 (25.0%)
Resection – n (%)	
Duodenal resection + end to end anastomosis	2 (25.0%)
Wedge resection	6 (75.0%)
Tumor's diameter – cm	
Mean; SD	3.7; 2.0
Range	1.5–8
Mitosis – n/50HPF	
Mean; SD	9.75; 17.3
Range	0–52
Risk Classification – n (%)	
Very low risk	1 (12.5%)
Low risk	4 (50.0%)
High risk	3 (37.5%)
Follow-up – months	
Mean; SD	62.0; 44.9
Range	4–128

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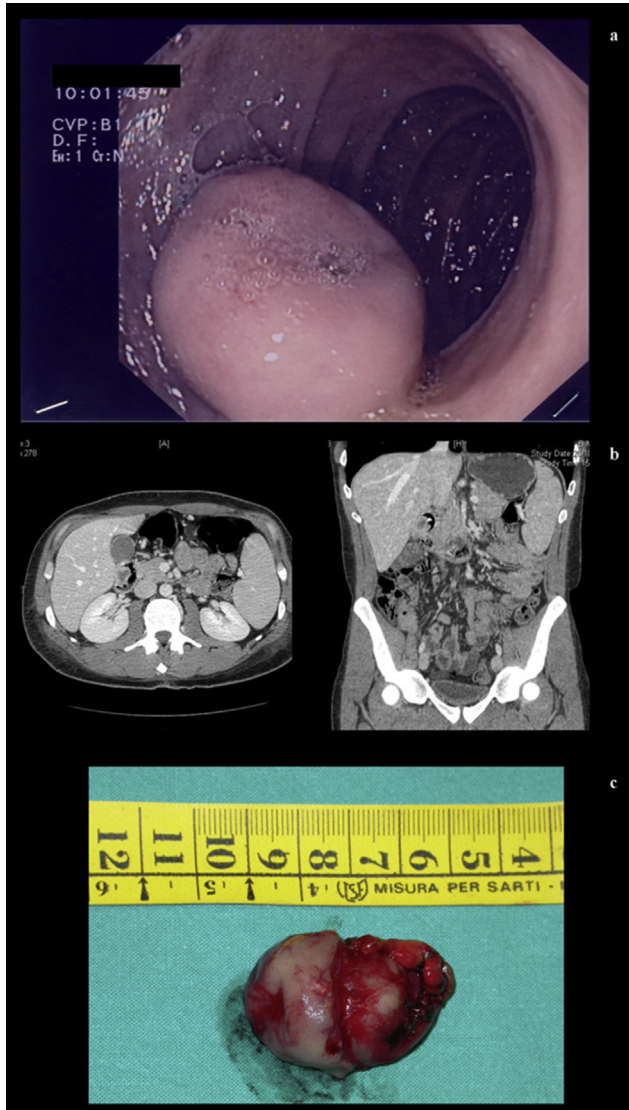


Figure 1. Duodenal GIST of the first portion. **a.** Endoscopy; **b.** contrast-enhanced abdominal CT scan; **c.** Wedge duodenal resection with primary suture.

(Clavien's C2⁷) - and another patient had a post-operative bleeding (Clavien's C3).

Mean follow-up was of 62.0 months. One high-risk patient underwent adjuvant treatment (Imatinib) and experienced a recurrence after 62 months; the patient died due to disease-progression 90 months after the surgical treatment.

As Duffaud and co-authors suggested, relapses might be related to risk criteria and cellular type, rather than the surgical approach, in line with the results reported by Johnston and our experience.^{1,8}

However, Hoepfner, consistently also with our findings, documented that a high-risk duodenal GIST might not be infrequent since 3/9 (33%) of the tumors he reported were at high risk.⁹

Even if the long-term results of local resections are comparable to the ones obtained by pancreaticoduodenectomies,

tumor's location, diameter and duodenal vascularisation might represent limitations to a conservative treatment, thus a multidisciplinary approach is highly recommended in order to evaluate the optimal strategy and a possible neoadjuvant treatment.

In conclusion, we agree with the authors in favouring the preservation of pancreas whenever possible, but on the basis of our experience and of the review of the literature, we also identified some key-features that surgeons should carefully evaluate in the management of duodenal GISTs, in order to assess the feasibility of a local resection:

1. Patients should be carefully staged in order to assess a possible involvement of the surrounding structures e.g. biliary tree and pancreas.
2. Kamath and Johnston reported a mean diameter of 2.5 cm and 3.5 cm for duodenal GISTs treated with local resection and a mean diameter 5.0 cm and 7 cm for GISTs requiring a pancreaticoduodenotomy,^{8,10} therefore it would be recommended to discuss in a multidisciplinary team the management of large tumors >5 cm and/or involving the papilla. Indeed, a local resection could be a possible option whenever the tumor could be managed with a R0 procedure.
3. Local resections could be performed with a wedge or a duodenal resection. The defect of the wall might be closed with a primary suture, with an end-to-end anastomosis or with a jejunal-duodenal anastomosis, in relation to the position or the tension derived by the sutures. A duodenal trans-resection could be a possible choice if the marginal vascularisation is conservable.⁶

On this basis, a pancreaticoduodenotomy should be considered for large GISTs tumors involving the papilla, the biliary tree or the pancreas, since it has been associated with a longer hospital stay, a higher morbidity rate and with similar outcome comparing with local resections.⁸

Conflict of interest disclosure

None of the authors has any potential financial conflict of interest related to this manuscript.

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L. Lorenzon*
M. Cavallini
G. Balducci
B. Frezza
M. Fanna
S. Caterino

Surgical and Medical Department of Translational Medicine, Sant'Andrea Hospital, Faculty of Medicine and Psychology, University of Rome "La Sapienza", Italy
*Corresponding author. Surgical and Medical Department of Translational Medicine, Sant'Andrea Hospital, Faculty of Medicine and Psychology University of Rome "La Sapienza", St. Andrea Hospital, Via di Grottarossa 1035-39, 00189 Rome, Italy. Tel.: +39 0633775989; fax: +39 0633775322.
E-mail address: laura.lorenzoni@uniroma1.it (L. Lorenzon)

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